CLAIMS

1. A method for the combustion of a fuel using an oxygenated gas, in which a jet of fuel and at least two jets of oxygen-rich oxygenated gas are injected, the first jet of oxygen-rich oxygenated gas, called the primary jet, being injected so as to be in contact with the jet of fuel and so as to generate incomplete first combustion, the gases output by this first combustion still including at least one portion of the fuel, and the second jet of oxygen-rich oxygenated gas being injected at a distance ℓ_1 from the jet of fuel so as to combust with a first portion of the fuel present in the gases output by the first combustion, characterized in that an oxygen-lean oxygenated gas is injected at a distance ℓ_2 from the jet of fuel so as to combust with a second portion of the fuel present in the gases output by the first combustion, and in that ℓ_2 is greater than ℓ_1.

2. The method as claimed in claim 1, characterized in that the oxygen-rich oxygenated gas has an oxygen concentration of greater than 30% by volume.

3. The method as claimed in claim 1 or 2, characterized in that the oxygen-lean oxygenated gas has an oxygen concentration of at most 30% by volume.

4. The method as claimed in one of the preceding claims, characterized in that the distance ℓ_1 is between 5 and 20 cm.

5. The method as claimed in one of the preceding claims, characterized in that the distance ℓ_2 is greater than 30 cm.

6. The method as claimed in one of the preceding claims, characterized in that the quantity of oxygen

injected by the jets of oxygen-rich oxygenated gas represents 10 to 50% of the total quantity of oxygen injected.

7. The method as claimed in one of the preceding claims, characterized in that the area of the cross section of the injection orifice for the oxygen-lean oxygenated gas is between 4 and 100 times the area of the injection cross section for the oxygen-rich oxygenated gas injected at the distance ℓ_2.

8. The method as claimed in one of the preceding claims, characterized in that the oxygen-lean oxygenated gas is preheated before being injected.

9. The method as claimed in one of the preceding claims, characterized in that the oxygen-rich oxygenated gas derives at least partly from a liquid oxygen storage unit.

10. A separate-injection burner assembly consisting of at least two blocks (1, 2, 14, 15, 16) and comprising a combustible gas injection orifice (3, 4) and at least four oxygenated-gas injection orifices (5, 6, 7, 8, 9, 10, 11, 12, 13), in which:

- the first block (1, 2) has a fuel injection orifice (3, 4) and at least two oxygenated-gas injection orifices (5, 6, 7, 8), the first oxygenated-gas injection orifice (5, 6) being placed so as to be in contact with the fuel injection orifice (3, 4), the second oxygenated-gas injection orifice (7, 8) being placed at a distance ℓ_1 from the fuel injection orifice (3, 4); and

- the second block (14, 15) has at least third and fourth oxygenated-gas injection orifices (9, 10, 11, 12), each placed at a distance ℓ_2 from the fuel injection orifice (3, 4) of the first block, ℓ_2 being greater than ℓ_1 and the fourth oxygenated-gas injection orifice (11, 12) having an area of between 4 and 100

times the area of the third orifice (9, 10).

11. The burner assembly as claimed in the preceding claim, characterized in that the first oxygenated-gas injection orifice (5, 6) is placed centrally in the fuel injection orifice (3, 4).

12. The burner assembly as claimed in claim 10 or 11, characterized in that it includes a third block (16) having a fifth oxygenated-gas injection orifice (13) placed at a distance ℓ_2 from the fuel injection orifice (3, 4) and having an area of between 4 and 100 times the area of the third injection orifice (9, 10).

13. The burner assembly as claimed in the preceding claim, characterized in that it comprises two first blocks (1, 2), two second blocks (14, 15) and one third block (16).

14. The use of the method defined in one of claims 1 to 8 for heating a glass charge or for a reheat furnace.

15. The use of the method defined in one of claims 1 to 8 when the continuous production of oxygen is interrupted.